

Part M – The IMC, as Modified by Chapter Comm 64

TABLE OF CONTENTS

CHAPTER 1 ADMINISTRATION M-1

Section

Comm 64 Subchapter 1

Purpose, Scope, Application, and Compliance .. M-1

Comm 64 Subchapter 2

Changes, Additions or Omissions to the
International Mechanical Code (IMC) M-1

102 Applicability..... M-2

108 Violations M-2

CHAPTER 2 DEFINITIONS..... M-3R

Section

201 General..... M-3R

202 General Definitions M-3R

CHAPTER 3 GENERAL REGULATIONS.... M-13R

Section

301 General..... M-13R

302 Protection of Structure M-14

303 Equipment and Appliance Location..... M-14

304 Installation M-15

305 Piping Support M-16

306 Access and Service Space M-16

307 Condensate Disposal M-17

308 Clearance Reduction..... M-18

309 Temperature Control M-19R

310 Explosion Venting M-19R

311 Smoke and Heat Vents M-20

312 Heating and Cooling Load Calculations M-20

CHAPTER 4 VENTILATION..... M-21R2

Section

401 General..... M-21R2

402 Natural Ventilation..... M-22R

403 Mechanical Ventilation M-22R

404 Enclosed Parking Garages M-26aR

405 Systems Control..... M-26aR

406 Ventilation of Uninhabited Spaces..... M-26aR

CHAPTER 5 EXHAUST SYSTEMS M-27R

Section

501 General..... M-27R

502 Required Systems M-27R

503 Motors and Fans M-33

504 Clothes Dryer Exhaust M-33

505 Domestic Kitchen Exhaust Equipment..... M-34

506 Commercial Kitchen Grease Ducts
and Exhaust Equipment M-34

507 Commercial Kitchen Hoods..... M-37

508 Commercial Kitchen Makeup Air M-39

509 Fire Suppression Systems..... M-39

510 Hazardous Exhaust Systems..... M-39

511 Dust, Stock and Refuse Conveying
Systems..... M-41

512 Subslab Soil Exhaust Systems M-41

513 Smoke Control Systems M-41

CHAPTER 6 DUCT SYSTEMS..... M-49

Section

601 General M-49

602 Plenums M-49

603 Duct Construction and Installation..... M-50

604 Insulation..... M-51R

605 Air Filters..... M-52R

606 Smoke Detection Systems Control M-52R

607 Ducts and Air Transfer Openings M-53R

CHAPTER 7 COMBUSTION AIR..... M-57R2

Section

701 General..... M-57R2

702 Inside Air..... M-57R2

703 Outdoor Air M-57R2

704 Combined Use of Inside and
Outdoor Air (Condition 1)..... M-58

705 Combined Use of Inside and
Outdoor Air (Condition 2)..... M-58

706 Forced Combustion Air Supply M-58

707 Direct Connection..... M-59

708 Combustion Air Ducts M-59

709 Opening Obstructions..... M-59

710 Opening Location and Protection..... M-59

CHAPTER 8 CHIMNEYS AND VENTS..... M-61R2

Section

801	General.....	M-61R2
802	Vents.....	M-62
803	Connectors	M-63
804	Direct-Vent, Integral Vent and Mechanical Draft Systems	M-64
805	Factory-Built Chimneys	M-65
806	Metal Chimneys	M-65

**CHAPTER 9 SPECIFIC APPLIANCES,
FIREPLACES AND SOLID FUEL-
BURNING EQUIPMENT M-67R**

Section

901	General.....	M-67R
902	Masonry Fireplaces	M-67R
903	Factory-Built Fireplaces	M-67R
904	Pellet Fuel-Burning Appliances.....	M-67R
905	Fireplace Stoves and Room Heaters	M-67R
906	Factory-Built Barbecue Appliances.....	M-67R
907	Incinerators and Crematories.....	M-67R
908	Cooling Towers, Evaporative Condensers and Fluid Coolers.....	M-68R
909	Vented Wall Furnaces	M-68R
910	Floor Furnaces	M-68R
911	Duct Furnaces	M-68R
912	Infrared Radiant Heaters	M-69R
913	Clothes Dryers.....	M-69R
914	Sauna Heaters	M-69R
915	Engine and Gas Turbine-Powered Equipment and Appliances	M-69R
916	Pool and Spa Heaters.....	M-69R
917	Cooking Appliances.....	M-69R
918	Forced-Air Warm-Air Furnaces.....	M-70R
919	Conversion Burners	M-70R
920	Unit Heaters.....	M-70R
921	Vented Room Heaters	M-71R
922	Kerosene and Oil-Fired Stoves	M-71R
923	Small Ceramic Kilns	M-71R
924	Stationary Fuel Cell Power Plants.....	M-71R

**CHAPTER 10 BOILERS, WATER HEATERS
AND PRESSURE VESSELS..... M-73**

Section

Comm 64.1001

Boilers, Water Heaters and Pressure Vessels ... M-73

CHAPTER 11 REFRIGERATION M-75

Section

Comm 64.1101

Refrigeration..... M-75

CHAPTER 12 HYDRONIC PIPING..... M-77

Section

Comm 64.1201

Hydronic Piping

SUPPLY AIR SYSTEM. An assembly of connected ducts, plenums, fittings, registers and grilles through which air, heated or cooled, is conducted from the supply unit to the space or spaces to be heated or cooled (see also “Return air system”).

THEORETICAL AIR. The exact amount of air required to supply oxygen for complete combustion of a given quantity of a specific fuel.

THERMAL RESISTANCE (*R*). A measure of the ability to retard the flow of heat. The *R*-value is the reciprocal of thermal conductance.

TLV-TWA (THRESHOLD LIMIT VALUE-TIME-WEIGHTED AVERAGE). The time-weighted average concentration of a refrigerant or other chemical in air for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers are repeatedly exposed, day after day, without adverse effects, as adopted by the American Conference of Government Industrial Hygienists (ACGIH).

TOILET ROOM. A room containing a water closet and, frequently, a lavatory, but not a bathtub, shower, spa or similar bathing fixture.

TOXICITY CLASSIFICATION. Refrigerants shall be classified for toxicity to one of two classes in accordance with ASHRAE 34:

Class A. Refrigerants for which toxicity has not been identified at concentrations less than or equal to 400 parts per million (ppm), based on data used to determine Threshold Limit Value-Time-Weighted Average (TLV-TWA) or consistent indices.

Class B. Refrigerants for which there is evidence of toxicity at concentrations below 400 ppm, based on data used to determine TLV-TWA or consistent indices.

TRANSITION FITTINGS, PLASTIC TO STEEL. An adapter for joining plastic pipe to steel pipe. The purpose of this fitting is to provide a permanent, pressure-tight connection between two materials which cannot be joined directly one to another.

UNCONFINED SPACE. A space having a volume not less than 50 cubic feet per 1,000 Btu/h (4.8 m³/kW) of the aggregate input rating of all appliances installed in that space. Rooms communicating directly with the space in which the appliances are installed, through openings not furnished with doors, are considered a part of the unconfined space.

UNIT HEATER. A self-contained appliance of the fan type, designed for the delivery of warm air directly into the space in which the appliance is located.

UNUSUALLY TIGHT CONSTRUCTION. See s. Comm 65.0202(1).

Note: Section Comm 65.0202 (1) reads: “ ‘Unusually tight construction’ means the total area of outdoor openings is less than 3 percent of the floor area of the space in which equipment is located.” [Comm 64.0202 (2) (b)]

VENT. A pipe or other conduit composed of factory-made components, containing a passageway for conveying combustion products and air to the atmosphere, listed and labeled for use with a specific type or class of appliance.

Pellet vent. A vent listed and labeled for use with listed pellet fuel-burning appliances.

Type L vent. A vent listed and labeled for use with oil-burning appliances that are listed for use with Type L vents.

VENT CONNECTOR. The pipe that connects an approved fuel-fired appliance to a vent.

VENT DAMPER DEVICE, AUTOMATIC. A device intended for installation in the venting system, in the outlet of an individual automatically operated fuel-burning appliance that is designed to open the venting system automatically when the appliance is in operation and to close off the venting system automatically when the appliance is in a standby or shutdown condition.

VENTILATION. The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

VENTILATION AIR. That portion of supply air that comes from the outside (outdoors), plus any recirculated air that has been treated to maintain the desired quality of air within a designated space.

VENTING SYSTEM. A continuous open passageway from the flue collar of an appliance to the outside atmosphere for the purpose of removing flue or vent gases. A venting system is usually composed of a vent or a chimney and vent connector, if used, assembled to form the open passageway.

WATER HEATER. Any heating appliance or equipment that heats potable water and supplies such water to the potable hot water distribution system.

CHAPTER 4

VENTILATION

SECTION 401 GENERAL

401.1 Scope. This chapter shall govern the ventilation of spaces within a building intended to be occupied. This chapter does not govern the requirements for smoke control systems.

401.2 [Comm 64.0401 (1)] Ventilation required. Every occupied space shall be ventilated by natural means in accordance with IMC Section 402 or by mechanical means in accordance with IMC Section 403 and as specified in Table 64.0403.

401.3 [Comm 64.0401 (2)] When required.

(a) **Outside air.** Mechanical ventilation systems shall be operated to provide a continuous source of outside air to all areas while people are present.

(b) **Operation.**

1. Except as provided in subd. 2., the required building exhaust ventilating systems shall operate continuously when people are in the building to provide the amount of exhaust specified in Table 64.0403.

Note: Chapter Comm 32 may require continuous operation of some exhaust systems, such as purging systems, chloride storage exhaust or industrial exhaust.

2. Subdivision 1. does not apply to all of the following:
 - a. Toilet rooms with two or fewer total water closets or urinals, if the required ventilation is provided when the room is occupied.
 - b. Shower rooms with two or fewer showerheads if the required ventilation is provided when the room is occupied.
 - c. Common residential laundry rooms with a total of four or fewer washers and dryers if the required ventilation is provided when the room is occupied.
 - d. Mechanical exhaust systems for natatoriums even when the building is not occupied.

[B] 401.4 [Comm 64.0401 (3)] Exits. Vestibule ventilation for smokeproof enclosures shall be in accordance with the IBC.

401.5 Opening location. Outside air exhaust and intake openings shall be located a minimum of 10 feet (3048 mm) from lot lines or buildings on the same lot. Where openings front on a street or public way, the distance shall be measured to the centerline of the street or public way.

Exception: Group R-3.

401.5.1 [Comm 64.0401 (4)] Intake openings.

(a) **Additional requirements.**

1. Mechanical and required gravity outside air intake openings shall be located a minimum of 10 feet (3048 mm) from any hazardous or noxious contaminant such as vents, chimneys, plumbing vents, streets, alleys, parking lots and locating

docks, except as otherwise specified in this code. Where a source of contaminant is located within 10 feet (3048 mm) of an intake opening, such opening shall be located a minimum of 2 feet (610 mm) below the contaminant source.

2. The lowest side of outside air intake required openings shall be located at least 12 inches (305 mm) vertically from the adjoining grade level, above adjoining roof surfaces, or above the bottom of an areaway.
3. If an outside air intake is located in an areaway, the areaway shall have a horizontal cross section equal to or greater than the free area of the outside air intake opening.
4. For health care facilities, all of the following shall apply:
 - a. Except as provided under subpar. b., outdoor air intakes shall be located at least 25 feet (7620 mm) from exhaust outlets of ventilating systems, combustion equipment stacks, medical-surgical vacuum systems, plumbing vents or areas that may collect vehicular exhaust or other noxious fumes.
 - b. Plumbing and vacuum vents that terminate at a level above the top of the air intake may be located as close as 10 feet (3048 mm) to an outdoor air intake.
 - c. The bottom of outdoor air intakes serving central systems shall be located at least 6 feet (1829 mm) above ground level or, when installed above the roof, at least 3 feet (914 mm) above roof level.
 - d. Exhaust outlets from areas that may be contaminated shall be located above roof level and arranged to minimize recirculation of exhaust air into the building.

(b) **Exceptions:**

1. The setback distances as specified in IMC Section 401.5.1 shall not apply to the combustion air intake of a direct vent appliance.
2. Unless a greater distance is specified by the manufacturer, exhaust openings for 100 cfm or less discharge shall be located at least 12 inches (305 mm), measured in any direction, from doors or openable windows.
3. The 10-foot (3048 mm) minimum separation does not apply to the intake and exhaust of a factory-packaged rooftop unit or other listed outdoor appliance provided nothing restricts air flow around the unit. The exhaust and intake of the unit shall be located to minimize contamination of outside air.

4. Unless a greater distance is specified by the manufacturer, product of combustion outlets of direct vent appliance vents shall terminate at least 12 inches (305 mm) measured in any direction from doors or openable windows.
5. Where it can be demonstrated that an engineered system design will prevent the maximum concentration of contaminants brought in through the outside air intake from exceeding the maximum contaminant concentration obtainable by providing the separation distances in accordance with sub. (4) (a), the outdoor air intakes may be located in accordance with such engineered system design.

Note: See ch. Comm 82 for plumbing vent setbacks. That rule requires plumbing vents to be 10 feet (3048 mm) from air intakes and 10 feet (3048 mm) horizontally from or 2 feet (610 mm) above roof scuttles, doors or openable windows.

Note: See NFPA standard 45, Fire Protection for Laboratories Using Chemicals, adopted under ch. Comm 10, for chemical fume hood exhaust location. Health care and related facilities may have additional requirements.

401.5.2 Exhaust openings. Outside exhaust openings shall be located so as not to create a nuisance. Exhaust air shall not be directed onto walkways.

Comm 64.0401 (5)

- (a) **Gravity ventilation ducts.** Gravity ventilation ducts shall extend not less than 2 feet (610 mm) above the highest portion of the building within a 10-foot (3048 mm) radius of the duct and shall be provided with a siphon roof ventilator.
- (b) **Barometric relief vents.** Where barometric relief vents are installed on the roof, the discharge openings shall be no less than 2 feet (610 mm) above the roof surface where the vent pierces the roof.

401.6 Outdoor opening protection. Air exhaust and intake openings that terminate outdoors shall be protected with corrosion-resistant screens, louvers or grilles. Openings in louvers, grilles and screens shall be sized in accordance with Table 401.6, and shall be protected against local weather conditions. Outdoor air exhaust and intake openings located in exterior walls shall meet the provisions for exterior wall opening protectives in accordance with the *International Building Code*.

**TABLE 401.6
OPENING SIZES IN LOUVERS, GRILLES AND
SCREENS PROTECTING OUTDOOR EXHAUST AND
AIR INTAKE OPENINGS**

OUTDOOR OPENING TYPE	MINIMUM AND MAXIMUM OPENING SIZES IN LOUVERS, GRILLES AND SCREENS MEASURED IN ANY DIRECTION
Exhaust openings	Not < 1/4 inch and not > 1/2 inch
Intake openings in residential occupancies	Not < 1/4 inch and not > 1/2 inch
Intake openings in other than residential occupancies	> 1/4 inch and not > 1 inch

For SI: 1 inch = 25.4 mm.

401.7 Contaminant sources. Stationary local sources producing air-borne particulates, heat, odors, fumes, spray, vapors, smoke or gases in such quantities as to be irritating or injurious to health shall be provided with an exhaust system in accor-

dance with Chapter 5 or a means of collection and removal of the contaminants. Such exhaust shall discharge directly to an approved location at the exterior of the building.

**[B] SECTION 402
NATURAL VENTILATION**

402.1 General. Natural ventilation of an occupied space shall comply with Chapter 12 of the *International Building Code*.

Comm 64.0402 Natural ventilation shall be permitted only in areas specified in Table 64.0403.

**SECTION 403
MECHANICAL VENTILATION**

403.1 [Comm 64.0403 (1)] Ventilation system.

- (a) Mechanical ventilation shall be provided by a method of supply air and exhaust air. The amount of supply air shall be approximately equal to the amount of return and exhaust air. The system shall not be prohibited from producing negative or positive pressure. The system to convey ventilation air shall be designed and installed in accordance with IMC Chapter 6.
- (b) Ventilation supply systems shall be designed to deliver the required rate of supply air into the occupied zone within an occupied space.

403.2 Outdoor air required. The minimum ventilation rate of required outdoor air shall be determined in accordance with Section 403.3.

Comm 64.0403 (2)

- (a) **Exception:** Where it can be demonstrated that an engineered ventilation system design will prevent the maximum concentration of contaminants from exceeding the maximum obtainable by providing the rate of outdoor air ventilation determined in accordance with IMC Section 403.3, the minimum required rate of outdoor air may be reduced in accordance with such engineered system design.
- (b) **Additional requirement.** The outdoor air shall be free from contamination of any kind in proportions detrimental to the health and comfort of the general population exposed to it.

403.2.1 [Comm 64.0403 (3)] Recirculation of air. The air required by Section 403.3 shall not be recirculated. Air in excess of that required by Section 403.3 shall not be prohibited from being recirculated as a component of supply air to building spaces, except that:

1. Ventilation air shall not be recirculated from one dwelling to another or to dissimilar occupancies.
2. Supply air to a swimming pool and associated deck areas shall not be recirculated unless such air is dehumidified to maintain the relative humidity of the area at 60 percent or less. Air from this area shall not be recirculated to other spaces.
3. Where mechanical exhaust is required by Table 64.0403, recirculation of air from such spaces shall be

TABLE 64.0403—continued
REQUIRED MINIMUM INSIDE TEMPERATURE AND OUTDOOR VENTILATION AIR

OCCUPANCY CLASSIFICATION ⁱ	VENTILATION REQUIREMENTS BASIS OF CAPACITY				
	Minimum Inside Temperature (degrees F)	Estimated Maximum Occupant Load (persons per 1,000 sq. ft.) ^a	Natural Ventilation Allowed	Exhaust ^e (cfm/net sq. ft. floor area)	Air Change Rate ^k (minimum air change per hour with A/C)
Retail stores, sales floors and showroom floors	68	8	yes	—	1.0
Seasonal occupancies, camps and lodges					
Dining and recreational areas	NMR	15	yes	—	—
Living and sleeping areas	NMR	—	yes	—	—
Club houses	NMR	15	yes	—	—
Drive-ins	NMR	15	yes	—	—
Specialty shops					
Automotive service and repair garages	60	—	no	0.5	—
Barber shop	68	25	no	—	—
Beauty salons ^c	68	—	no	0.5	—
Clothier, furniture specialty shops	68	8	yes	—	1.0
Florist shops	68	8	yes	—	1.0
Hardware, drugs, fabrics stores	68	8	yes	—	1.0
Supermarkets	68	8	yes	—	1.0
Sports and amusement					
Ballrooms and discos	68	100	no	—	2.0
Bleacher areas	68	363 or 18 in./person	no	—	2.0
Bowling centers (seating areas)	68	70	no	—	2.0
Game rooms	68	70	no	—	2.0
Natatoriums	76	—	—	2.0 cfm/sq. ft. pool area	—
Ice skating rinks (indoor)	NMR	5	no	—	—
Playing floor (gymnasiums)	68	30	no	—	2.0
Roller skating rinks (indoor)	60	30	no	—	2.0
Spectator areas (non-bleacher)	68	150	no	—	2.0
Storage					
Chlorine storage and handling rooms	NMR	—	no	2.00	—
Enclosed parking garages ^d	NMR	—	no	0.50	—
Warehouses	NMR	—	—	—	—
Theaters					
Auditoriums	68	150	no	—	2.0
Lobbies	68	150	no	—	—
Stages, studios	68	70	no	—	2.0
Ticket booths	68	60	no	—	2.0
Transportation					
Platforms	NMR	100	no	—	2.0
Waiting rooms	68	100	no	—	2.0
Utility and public spaces					
Elevators ^g	NMR	—	no	1.00	—
Janitor closets ^l	NMR	—	no	2.0 or 75 cfm/sink	—
Locker and dressing rooms ^b	70	—	no	0.5	—
Shower rooms	70	—	no	2.00	—
Toilet rooms ^{b, g, l}	68	—	no	75 cfm/TF	—
Smoking lounges ^{b, g}	68	—	no	2.0	—
Workrooms					
Bank vault	68	5	no	—	—
Meat processing workroom	NMR	10	yes	—	—
Pharmacy	68	20	yes	—	1.5
Photo studio	68	10	yes	—	1.0
Printing	60	13	yes	footnote o	—

For SI: 1 inch = 25.4 mm, 1 cubic foot per minute per square foot = 0.00508 m³/(s·m²), °C = [(°F) - 32]/1.8.

CFM = Cubic feet per minute; LF = Lineal foot; NMR = No minimum requirement; TF = Toilet fixtures (water closets and urinals); A/C = Air conditioning.

- Based upon net floor area.
- Mechanical exhaust is required and the recirculation of air from these spaces that would otherwise be allowed by IMC Section 403.2.1 is prohibited.
- The classification of a "beauty" shop depends on the types of services provided. Only beauty salons routinely provide chemical processing of hair to produce texture or color changes, or manicures or other services with a similar need for air-borne contaminant and odor control.
- Enclosed parking garages are parking garages with less than 30% open areas in the total wall area enclosing the garage. Ventilation systems in enclosed parking garages shall comply with IMC Section 404. A mechanical ventilation system shall not be required in garages having a floor area of 850 square feet or less and used for the storage of 5 or fewer motorized vehicles. Requirements for parking garages shall apply to all buildings, or parts of buildings, into which motor vehicles are driven for loading or unloading or are stored.
- The ventilation rate is based upon cubic feet per minute per square foot of the floor area being ventilated.
- The sum of the outdoor and transfer air from adjacent spaces shall be sufficient to provide an exhaust rate of not less than 1.5 cfm/sf.
- Transfer air permitted in accordance with IMC Section 403.2.2.
- See specific occupancy classification table entries for inside design temperature and cfm per net square feet floor area requirements.
- This table is intended as a reference guide with generic Use types listed under those Occupancy types most often associated with the use. When Use types are mixed between Occupancy types and the Use type is unlisted within the specific Occupancy type, the use shall be ventilated as required by the same Use type listed in the other Occupancy type. Unlisted occupancies or uses shall be ventilated as required for the most similar listed occupancy classification acceptable to the department. Rooms that are used for different purposes at different times shall be designed for the greatest amount of ventilation required for any of the uses.
- When unseparated toilet fixtures are included in sleeping areas (such as cells), the room shall be ventilated as required for toilet rooms.
- See sub. (8) for specific requirements and exceptions. Units listed as minimum air change per hour with air conditioning unless otherwise specified.
- Natural ventilation may be allowed under this section.
- For air ventilation requirements in healthcare facilities, use American Institute of Architects (AIA) guidelines (AIA Guidelines for Design and Construction of Hospital and Health Care Facilities).
- The minimum mechanical ventilation rate is 15 cfm/room of outside air.
- Refer to IMC Chapter 5 for requirements.

6. Health care facilities. Recirculation and flow of air in health care facilities shall comply with the requirements in Table 2 or Table 6, as applicable, of AIA Guidelines for Design and Construction of Hospital and Health Care Facilities.

(d) Outside air requirement waived.

1. If a mechanical air supply system is provided and the requirement for outdoor air determined in accordance with Table 64.0403 is less than 5 percent of the minimum required air changes per hour, the requirement for outside air may be eliminated.
2. The requirement for outside air or percent of openings specified in Table 64.0403 may be omitted in large volume spaces containing 5,000 or more cubic feet (142 m³) per occupant. Required exhaust ventilation and makeup air shall not be omitted.

403.3.1 [Comm 64.0403 (7)] System operation. The minimum flow rate of outdoor air that the ventilation system must be capable of supplying during its operation shall be permitted to be based on the rate per person indicated in Table 64.0403 and the actual number of occupants present.

403.3.2 Common ventilation system. Where spaces having different ventilation rate requirements are served by a common ventilation system, the ratio of outdoor air to total supply air for the system shall be determined based on the space having the largest outdoor air requirement or shall be determined in accordance with the following formula:

$$Y = \frac{X}{(1 + X - Z)} \quad \text{(Equation 4-1)}$$

where:

$Y = V_{ot}/V_{st}$ = Corrected fraction of outdoor air in system supply.

$X = V_{on}/V_{st}$ = Uncorrected fraction of outdoor air in system supply.

$Z = V_{oc}/V_{sc}$ = Fraction of outdoor air in critical space. The critical space is that space with the greatest required fraction of outdoor air in the supply to this space.

V_{ot} = Corrected total outdoor airflow rate.

V_{st} = Total supply flow rate, i.e., the sum of all supply for all branches of the system.

V_{on} = Sum of outdoor airflow rates for all branches on system.

V_{oc} = Outdoor airflow rate required in critical spaces.

V_{sc} = Supply flow rate in critical space.

Comm 64.0403 (8) Alternative requirements.

(a) General. Except as specified in par. (d), each room served by a mechanical ventilation system shall be provided with the minimum outdoor airflow rate determined individually for each room, or the minimum amount of outside air may be supplied to the system if a minimum air change rate is provided in accordance with this subsection or waived in accordance with par. (c).

(b) Minimum air change.

1. Application.

- a. The required air change shall be provided while people are present.
- b. The air change rate may be based on actual room height or up to 10 feet (3048 mm) from the floor level of the room in question. The volume above 10 feet (3048 mm), in rooms that are more than 10 feet (3048 mm) in height, need not be considered in the air change requirement if the required air change is designed to occur in the lower 10 feet (3048 mm) of the occupied space.
- c. The required minimum air change volume shall be transferred through the air-handling equipment where it is diluted or replaced with outside air, and supplied back to the space.

2. Six air changes per hour. Except as specified in subd. 3 and unless mechanical exhaust is required by Table 64.0403, the total air change rate for each room shall be at least six air changes per hour.

3. Less than six air changes per hour. An air change rate of less than six air changes per hour will be permitted where mechanical cooling (air conditioning) is provided to maintain an interior design temperature of 78°F (25°C) or lower and the heat gain requirement for the space has been satisfied. The air change rate may not be less than the minimum air changes per hour if specified in Table 64.0403.

Note: As specified in s. Comm 64.0403, the amount of outside air required must be maintained even if the air change rate is reduced.

(c) Air change requirement waived. The air change requirement for six air changes per hour may be omitted in any of the following applications:

1. Buildings or rooms utilizing spot heating as the only source of heat.
2. Buildings where the requirement for outside air is waived in accordance with sub. (6) (d).
3. Buildings utilizing natural ventilation as specified in IMC Section 402.

(d) Air change rates in health care facilities. Air change rates in health care facilities shall comply with the requirements in Table 2 or Table 6, as applicable, of AIA Guidelines for Design and Construction of Hospital and Health Care Facilities.

403.3.3 Variable air volume system control. Variable air volume air distribution systems, other than those designed